

IMPROVE PERCENTAGE OF TOTAL KNEE REPLACEMENT (TKR) PATIENTS RECEIVE ANTI EMBOLIC THERAPIES ON THE FIRST POSTOPERATIVE DAY

Authors: Tan Ree Nee (Nurse Manager), Dr Lee Tuan Cheong (Emergency Physician), Natrah Abdullah (Nurse Manager), Lim Mou Sern (Pharmacist)

Objectives

- Patients undergoing total knee replacement are at a heightened risk of developing venous thromboembolism.
- The incidence of deep vein thrombosis varies between 40% and 70%, with fatal pulmonary embolism ranging from 1% to 7%. [MOH 2013]
- In 2022, four patients experienced embolism following TKR surgery, constituting approximately 1.2% of all TKR surgeries performed. The objective is to ensure that at least 90% of TKR patients receive at least one anti-embolic therapy.

Method

In early 2023, a multidisciplinary team was assembled to investigate postoperative thromboembolism occurrences among TKR patients. The team conducted investigations to understand existing practices and identify root causes of the incidents.

Interventions included

- Encouraging consultants and nurses to integrate mechanical DVT pumps, stockings, or medication prophylaxis into their practice as a priority and part of TKR clinical pathway.
- Training sessions were organized to educate and raise awareness among all staff members.
- Additionally, efforts were made to increase the availability of mechanical DVT pumps to 30 pumps as of 2023.
- Pharmacists took on the responsibility of reminding and notifying consultants about the utilization of anti-embolic medication.

Study

Many orthopedic consultants prefer ordering prophylactic medications such as subcutaneous Clexane and aspirin tablets, which have achieved a success rate of over 90%. Following this, they utilize DVT pumps, which have shown improved usage after additional purchases. However, TED stockings are minimally preferred by orthopedic consultants due to their inconvenience.

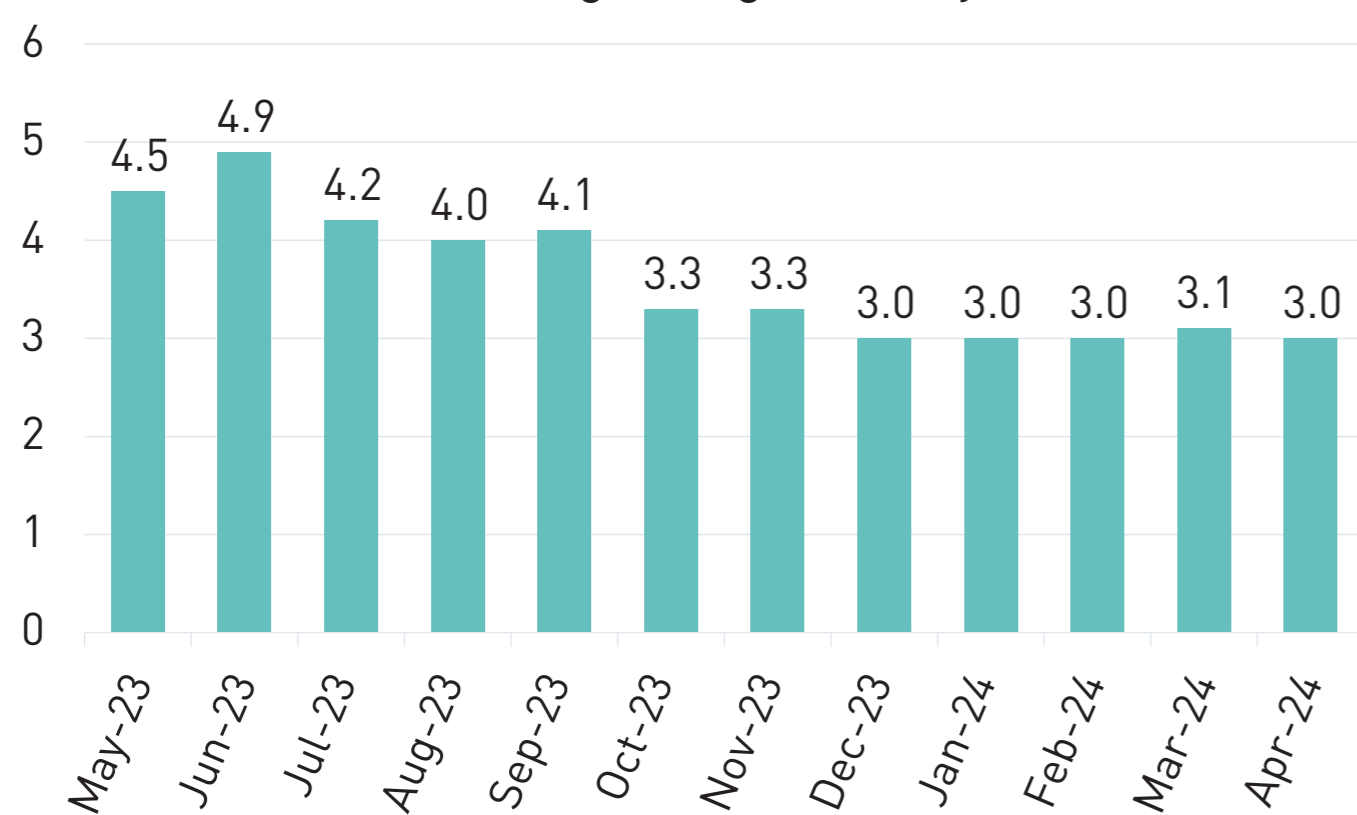
Act

This cohesive strategy has significantly diminished the likelihood of patients developing thromboembolism, thus guaranteeing high-quality and efficient care. Our dedication to patient safety and the minimization of complications is underscored by continuous auditing and monitoring.

Results

The data revealed that over 90% of patients received anti-embolic therapies due to heightened awareness and changes in practices among consultants. With these interventions in place, there were **NO** reported cases of pulmonary embolism among post-TKR patients during the latter half of 2023. A study conducted at Sunway Medical Center has also demonstrated an improvement in patient length of stay, reducing it from an average of 5 days to 3 days.

Average Length of Stay

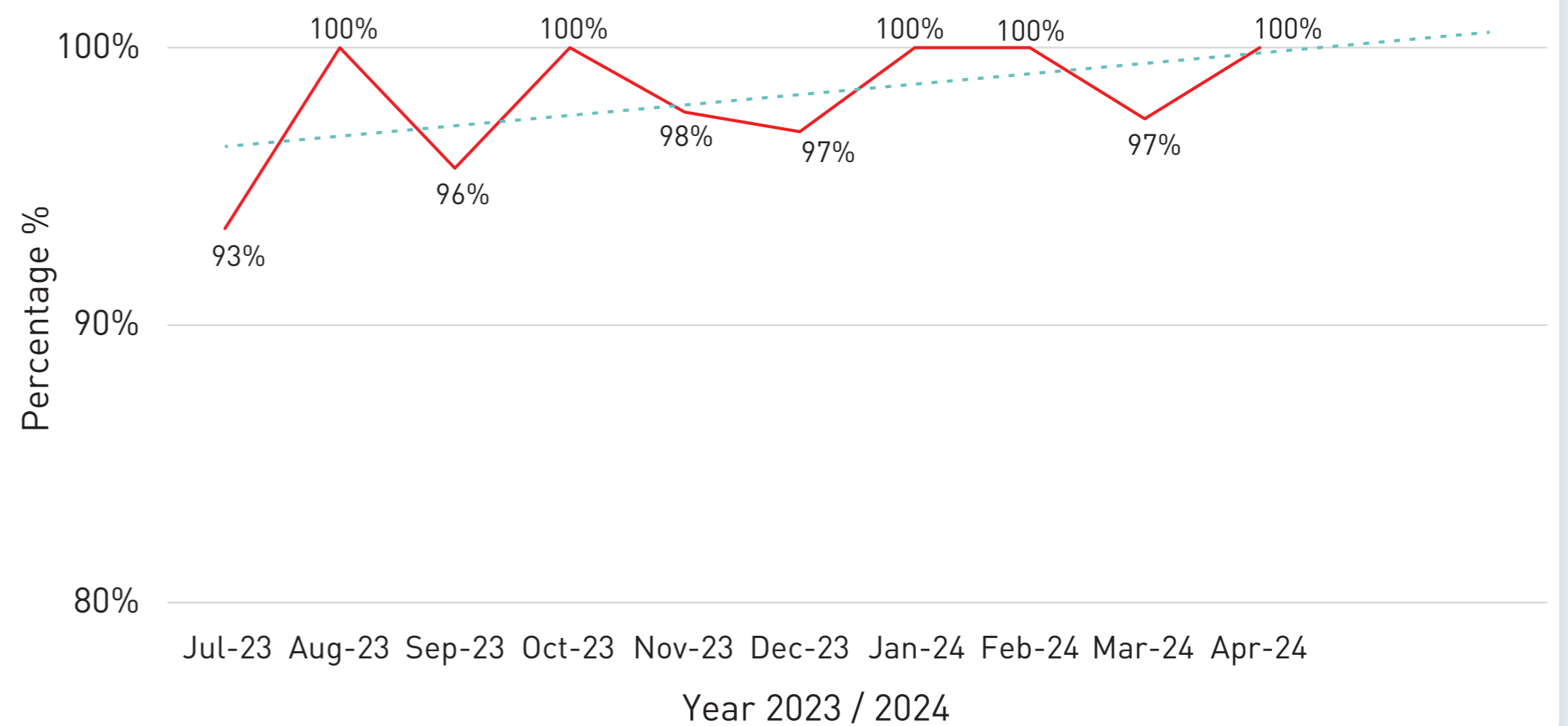


Conclusion

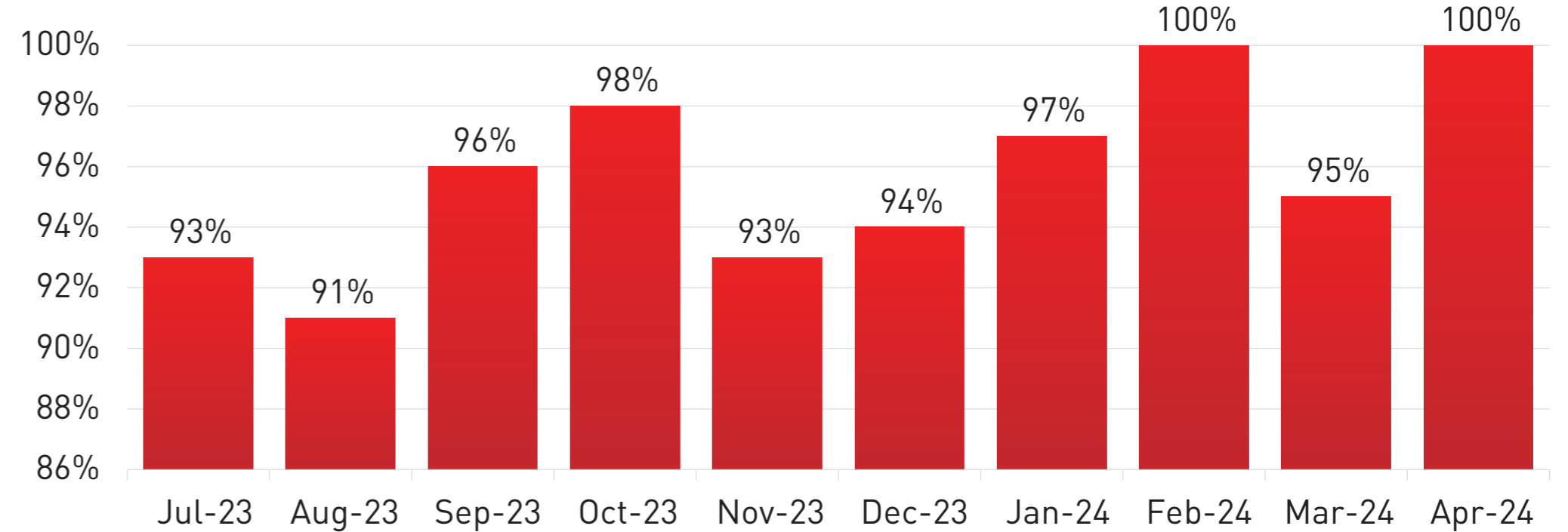
This coordinated effort has successfully diminished the risk of patients developing thromboembolism, ensuring top-notch and efficient patient care. Our unwavering commitment to prioritizing patient safety and mitigating the risk of complications is reinforced through continuous auditing and monitoring.

Evidence of Outcomes

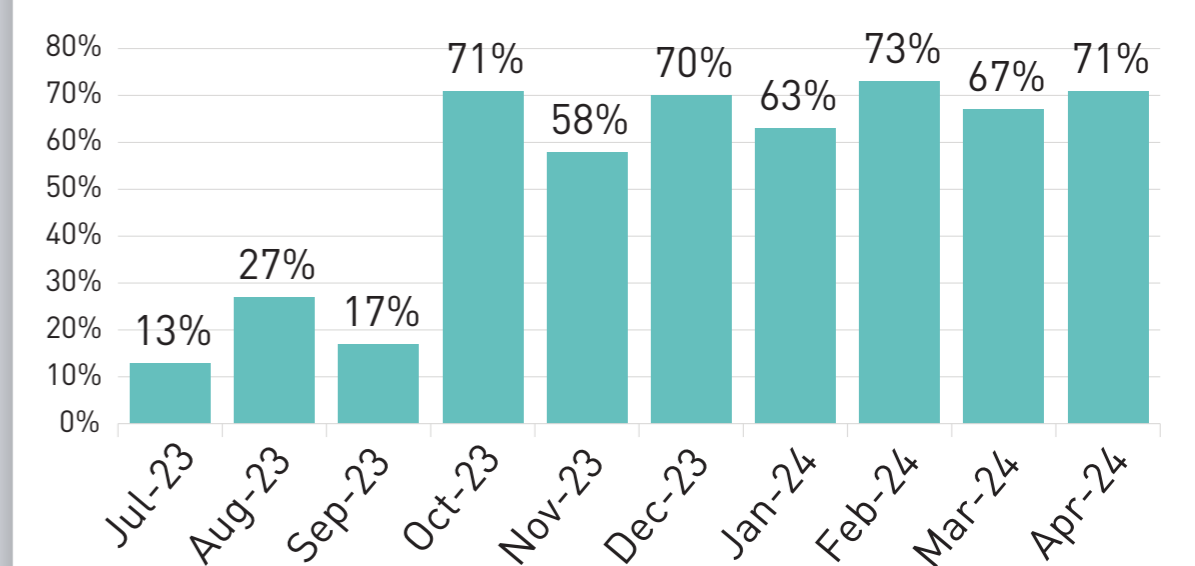
Total Knee Replacement (TKR) pathway patients receiving Anti Embolic Therapies within post op day 1



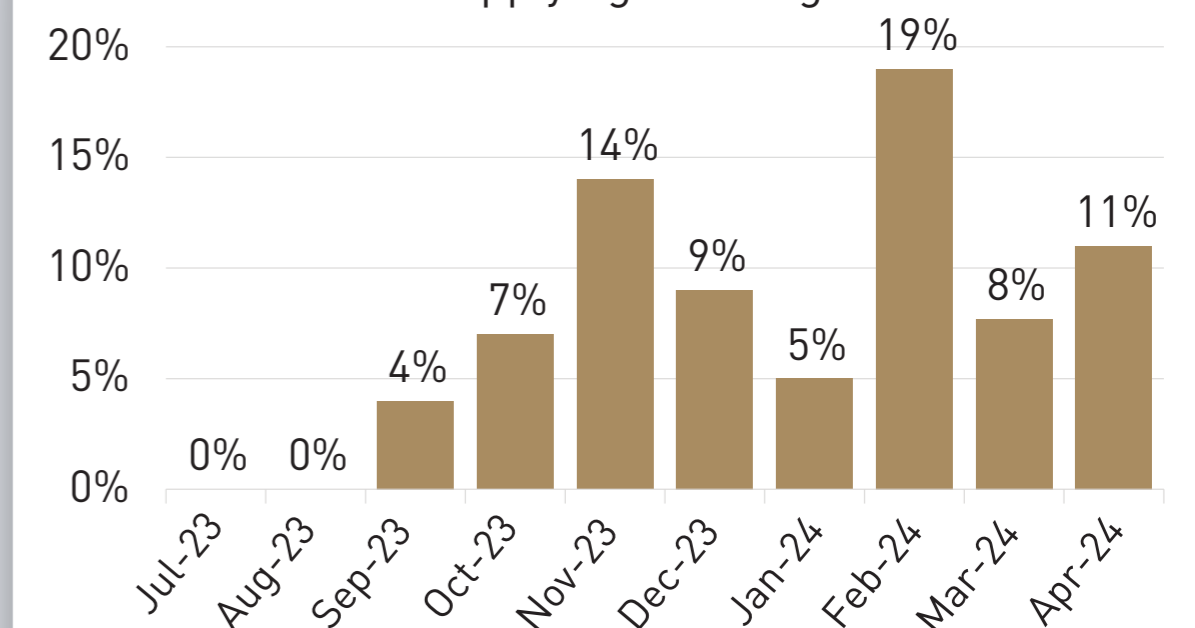
Prophylaxis given within post op day 1



Used mechanical DVT pump



Applying stocking



Evidence based references

Ministry of Health Malaysia. Clinical Practice Guidelines : Management of Osteoarthritis, 2nd Edition, 2013.

Ministry of Health Malaysia. National Antimicrobial Guideline (NAG) 2019, 3rd Edition.